Object Oriented Programming, Exercise 5

Topics: Passing objects as arguments, storing objects in a list, storing objects in a dictionary

Make a Git commit at least after every coding task.

Code in Python3 and follow the style guide.

1. Explain the following term and what is it used for:
    a. Multiple inheritance
2. True or false?
    a. The practice of procedural programming is centered on the creation of objects.
    b. Object reusability has been a factor in the increased use of object-oriented programming.
    c. It is a common practice in object-oriented programming to make all of a class's data attributes accessible to statements outside the class.
    d. A class methods does not have to have a self parameter.
    e. Starting an attribute name with two underscores will hide the attribute from code outside the class.
    f. You cannot directly call the __str__method.
3. Multiple choice:
    a. The _____ method is automatically called when an object is created.
        i. __init__
        ii. init
        iii. __str__
        iv. __object__
    b. The _____ programming practice is centered on creating functions that are separated from the data that they work on.
        i. modular
        ii. procedural
        iii. functional
        iv. object-oriented
    c. The _____ programming practice is centered on creating objects.
        i. object-centric
        ii. objective
        iii. procedural
        iv. object-oriented
    d. A(n) _____ is a component of a class that references data
        i. method
        ii. instance
        iii. data attribute
        iv. module
    e. By doing this, you can hide a class's attribute from code outside the class.

i. avoiding using the self-parameter to create the attribute
ii. begin the attribute's name with private__
iii. begin the name of the attribute with two underscores
iv. begin the name of the attribute with the symbol #

f. A(n) _____ method stores a value in the data attribute or changes its value in some other way.
i. modifier
ii. constructor
iii. mutator
iv. Accessor

4. Create multiple dices (at least three) and put them in a list. See that your dice can be rolled and the side can be shown. Create a small game where the best sum of three rolls wins. If the sum is a tie, tied dices are rolled as long as a winner is found (best side wins). Use functions and pass objects (or list of objects) as arguments. Use informative and clear output prints.
5. Create a class called Player. Player has at least the following data attributes: first name, last name and a player id. Remember to code accessor and mutator methods and str-method. Create a dictionary so that the player id is a key and each player has one dice. Roll each player's dice and print out each player's dice's side. Use informative and clear output print.
6. Create a class called Student and use the following data attributes: first name, last name and student id. Remember to code accessor and mutator methods and str-method. Store students and their pet mammal to dictionary (use the mammals from Exercise 4). Think, what should be used as the dictionary key. Code a function that prints out each student and their mammal's information. Use informative and clear output print.